* 1. Avoided conversion
     1. Select threshold to apply to SLEUTH 2030 data
     2. Assign NLCD 2011 (level 1) pixels with a SLEUTH2030 value > threshold to '2';   
        all other pixels retain their NLCD 2011 value.
     3. Run tools that update:
        1. NLCD land cover areas - catchments
        2. NLCD land cover areas - cumulative
        3. Flow length land cover
        4. Riparian land cover
     4. Copy current conditions table to new table, "AC\_ResponseVars", and update relevant columns:
        1. NLCD\_ (area of land covers 2,4,8, & 9)
        2. NLCD\_c (cumulative area of land covers 2,4,8, & 9)
        3. FLNLCD\_ (flow length land covers 2,4,8, & 9)
        4. RiparianNLCD\_ (riparian area of land covers 2,4,8, & 9)
     5. Apply table to models (Maxent/GLM/RF)
     6. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     7. Subtract habitat likelihood under current conditions to determine potential degradation
     8. *Areas with high potential degradation are priority candidates for avoided conversion*

* 1. Increased Buffer
     1. Copy current conditions table to new table, "Buffer\_ResponseVars", and update relevant columns:
        1. Sum FLNCLD values that are not water (1), urban (2) or forest (4) and add those to existing value of FLNLCD\_4.
        2. Set all FLNLCD that's not water (1), urban (2), or forest (4) to 0
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Sensitivity to hydrologic changes - Stream cooling
     1. Copy current conditions table to new table, "Cooling\_ResponseVars", and update relevant column:
        1. Add length of "warm" streams to current value of "cool" streams; zero out "warm" values
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Sensitivity to hydrologic changes - Stream warming (possibly for later)
     1. Copy current conditions table to new table, "Warming\_ResponseVars", and update relevant column:
        1. Add length of "cool" streams to current value of "warm" streams; zero out "cool" values
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Sensitivity to hydrologic changes - Velocity
     1. Copy current conditions table to new table, "Velocty\_ResponseVars", and update relevant column:
        1. Multiply current values of V0001 (Mean annual velocity) by 0.90 for 10% decrease
           1. Ask LB if 0.9 is reasonable
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Sensitivity to hydrologic changes - Increased low flow volume
     1. Copy current conditions table to new table, "IncrVol\_ResponseVars", and update relevant column:
        1. Q0001E\_min - annual discharge of the lowest month (\* 1.1)
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Sensitivity to hydrologic changes - Decreased max flow volume
     1. Copy current conditions table to new table, "DecrVol\_ResponseVars", and update relevant column:
        1. Q0001E\_max - annual discharge of the highest month (\* 0.9)
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Increased Wetland
     1. Reclassify all non-urban hydric pixels ("All Hydric" in ESRI Hydric Layer) as wetland; keep all other pixels as current NLCD2011
     2. Run tools that update:
        1. NLCD land cover areas - catchments
        2. NLCD land cover areas - cumulative
        3. Flow length land cover
        4. Riparian land cover
     3. Copy current conditions table to new table, "AC\_ResponseVars", and update relevant columns:
        1. NLCD\_ (area of land covers 2,4,8, & 9)
        2. NLCD\_c (cumulative area of land covers 2,4,8, & 9)
        3. FLNLCD\_ (flow length land covers 2,4,8, & 9)
        4. RiparianNLCD\_ (riparian area of land covers 2,4,8, & 9)
     4. Apply table to models (Maxent/GLM/RF)
     5. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     6. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Dam removal - upstream distance
     1. Copy current conditions table to new table, "UpDam\_ResponseVars", and update relevant column:
        1. Multiply current UpstreamDistance\_km values by 1.1
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Dam removal - downstream distance
     1. Copy current conditions table to new table, "DownDam\_ResponseVars", and update relevant column:
        1. Multiply current DownstreamDistance\_km values by 1.1
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift

* 1. Nutrient reductions: Animal operations
     1. Copy current conditions table to new table, "Animal\_ResponseVars", and update relevant column:
        1. Reduce current AnimalOps values by 1 (unless zero)
     2. Apply table to models (Maxent/GLM/RF)
     3. Average the three model results to produce a table of habitat likelihood under urbanized conditions
     4. Subtract habitat likelihood under current conditions to determine potential uplift